

GRASSHOPPER

SPECIES ACCOUNTS



BART DRIES

Acridinae

Gomphocerinae

Cyrtacanthacridinae

Melanoplinae

Oedipodinae



How to Read the Accounts



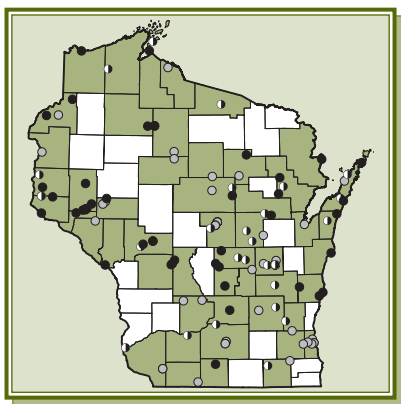
o standard currently exists for common names of the Acrididae. We took the common names used here from Blatchley (1920), Cantrall (1968), Pfadt (1994), and Capinera and Sechrist (1982). To encourage friendly relations between humans and insects, we took the liberty of changing all labels of “locust” to “grasshopper,” thus removing the badge of plague and pestilence from these valuable members of Wisconsin’s ecological community. The only exception to this practice is *Trimerotropis huroniana*, which the U.S. Fish and Wildlife Service includes on the endangered species list as the Lake Huron locust. Scientific names follow Naskrecki and Otte (1999). We do not intend the species descriptions to be diagnostic; refer to the keys for species identification. State rank listings come from the Wisconsin DNR’s Natural Heritage Inventory Program and global ranks come from NatureServe (2001). Both ranks were current as of March 7, 2003. Refer to Appendix C for rank definitions. Unless otherwise indicated, NatureServe ranks the grasshoppers as G5. Unfortunately, global distribution data remain very incomplete. Habitat information specific to Wisconsin collections is indicated as such; otherwise the habitat information has been taken from the listed references to facilitate the identification of potential habitat in Wisconsin.



Key to the Distribution Maps



lack dots indicate that the most recent collection from this site occurred after 1993, that is, during the years of the Prairie Invertebrate Study. Half-black dots mean that the most recent collection was after 1974 but before 1994. Grey dots indicate historical records when the most recent collection occurred between 1881 and 1973. We have no site-specific data for shaded counties without dots. Appendix A includes an index map with Wisconsin counties labeled.



- 1994-present
- ◐ 1974-1993
- 1881-1973

GRASSHOPPER

SPECIES ACCOUNTS



GIFF BEATON

ACRIDINAE

Gomphocerinae

Cyrtacanthacridinae

Melanoplinae

Oedipodinae



Metaleptea brevicornis
(Johannson)

Shorthorned Grasshopper

Description: Medium-sized, long-winged grasshopper. Males with a green dorsal stripe and dark brown forewings. Females variable in color, often light brown to green. Forewings come to an angled tip.

Range: Eastern U.S. south to Argentina.

Wisconsin distribution: Fond du Lac County.

State rank: SH/S1.

Habitat: Tall grasses, sedges along the margins of lakes and ponds. The Wisconsin specimen has no habitat information associated with it.

Discussion: Only one specimen labeled "Fond du Lac, Wisconsin" has been collected. The city of Fond du Lac and Fond du Lac County are located at the south end of a large lake, Lake Winnebago.

Specimens examined: 1 male at ACNAT. There is no collection date for this specimen.

References: Cantrall (1968), Otte (1981), Donato and Cigliano (2000).

see Color Plate, p. 33



Stethophyma gracile (Scudder)

Graceful Sedge Grasshopper

Description: Yellow to pale green slender grasshopper, slightly smaller than *S. lineata*. Lateral carinae of pronotum cut by one or two sulci. Lower surface of hind femora red. Hind tibiae pale with black spines.

Range: Primarily Northern U.S. and Canada, extending south in the mountain states to Colorado.

Wisconsin distribution: Northeastern Wisconsin, from Kewaunee, Marinette, and Shawano counties and Portage and Walworth counties.

State rank: S?.

Habitat: Sedge meadow, marsh, and swamp, Walworth County fen.

Discussion: We collected all five specimens in July- August 2000 and 2002.

Specimens examined: 5 males from 5 sites.

References: Hebard (1932), Otte (1981), Vickery and Kevan (1985).





Stethophyma lineata (Scudder)

Striped Sedge Grasshopper

Description: Yellow to pale green slender grasshopper. Lateral carinae of pronotum cut by three sulci. Side of forewing above the hind femur always with a white horizontal streak. Lower surface of hind femora red. Hind tibiae pale with black spines.

Range: New England west to Alaska and south to Indiana, Illinois, and Iowa.

Wisconsin distribution: Found in two northern counties and the southwestern corner of Wisconsin.

State rank: S3?.

Habitat: Wet prairie in Grant County, marsh and peaty swale within the Lake Superior beach and dune system, and northern sedge meadow in northern Wisconsin.

Discussion: No specimens of *Stethophyma* sp. were found in the collections. The grasshoppers are strong fliers and difficult to catch as they quickly cross an area of wetland and drop into the vegetation. Both *S. gracile* and *S. lineata* were collected at the Marinette County site, a large open sedge meadow area, part of a sizable wetland complex. These species might be quite local in distribution. Wetland habitats were poorly collected during this study. These adults were collected late July to mid-August.

Specimens examined: 5 males,
1 female from 4 sites.

References: Hebard (1932), Otte (1981),
Vickery and Kevan (1985).



Jim McEvoy

GRASSHOPPER

SPECIES ACCOUNTS



GIFF BEATON

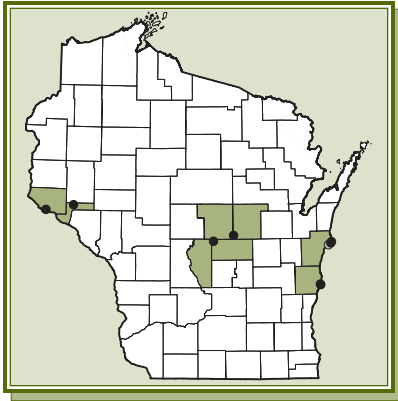
Acridinae

GOMPHOCERINAE

Cyrtacanthacridinae

Melanoplinae

Oedipodinae



GOMPHOCERINAE

Aeropedellus clavatus (Thomas)

Clubhorned Grasshopper

Description: Medium-sized grasshopper. Females gray, males gray with green markings on head, pronotum, and hind femora. Head obviously slanted with clubbed antennae and a white stripe extending down from the eye. Forewings shorter than abdomen.

Range: Canadian prairies and central Great Plains from Idaho to Minnesota, predominant along the front range of the Rocky Mountains.

Wisconsin distribution: Found in sandy areas south of the Tension Zone.

State rank: S2.

Habitat: Dry open grasslands in association with sandy soil, and Lake Michigan dunes.

Discussion: Adults collected mostly in June and July. At one site in Pepin County, specimens were readily collected in yellow pan traps. No stridulation has been recorded from Wisconsin *A. clavatus*.

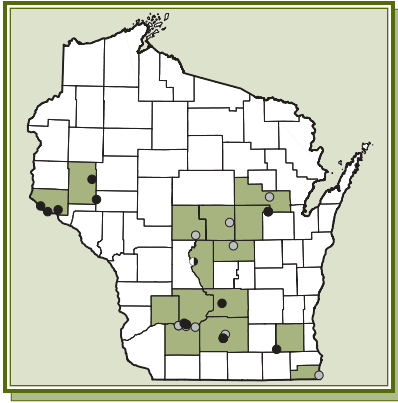
Specimens examined: 11 males, 14 females from 10 sites. Most (17 of 25) recorded from the most recent collection period.

References: Hebard (1932), Cantrall (1968), Otte (1981), Vickery and Kevan (1985), Pfadt (1994), NHI (2001).

see Color Plate, p. 33



JOHN A. HAARSTAD



Ageneotettix deorum
(Scudder)

Whitewiskered Grasshopper

Description: Small to medium-sized, reddish-brown grasshopper. Antennae light colored or white. Head not dramatically slanted. Forewings extend to end of abdomen. Hind femora with black dorsal markings. Hind tibiae red.

Range: California east to Michigan.

Wisconsin distribution: Collected from counties at or south of the Tension Zone.

State rank: S3?.

Habitat: Disturbed sand plains with patches of bare ground, Wisconsin River sand terraces, sandblows, sand prairies, and a few sites in oak openings.

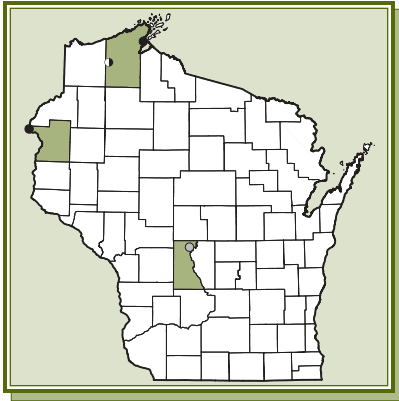
Historical Note: A 1912 specimen labeled “Kenosha dune region” is from a narrow sand dune area of the southern Lake Michigan shoreline created by glacial Lake Chicago. This area is now highly disturbed and existence of the species at the site is unlikely.

Discussion: Adults are collected from July to October. Over half of the specimens are from the most recent collection period.

Specimens examined: More than 90 specimens from 30 sites.

References: Hebard (1932), Otte (1981), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 34



Chloealtis abdominalis
(Thomas)

Rocky Mountain
Sprinkled Grasshopper

Description: Small, light brown grasshopper. Forewings to end of abdomen with rounded tips in males, much shorter and pointed in females. Lateral lobes of male pronotum dark in upper one-third. Hind femora unmarked. Hind tibiae reddish-orange, paler at base.

Range: Extreme northern U.S. from Maine to Washington, and south to New Mexico in the Rocky Mountains.

Wisconsin distribution: From three counties: two in the Central Plain and Bayfield County in the Northern Highland.

State rank: S1/S2.

Habitat: Three of 4 Wisconsin sites are in jack pine barrens in the sand areas of the Northwest and Central Plains.

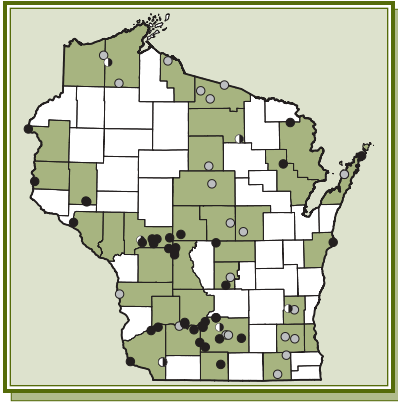
Discussion: Adults are collected in August.

Specimens examined: 9 specimens from 4 sites.

References: Hebard (1932), Otte (1981), Vickery and Kevan (1985).

see Color Plate, p. 34





Chloea conspersa (Harris)

Sprinkled Grasshopper

Description: Small, light brown grasshopper. Forewings to end of abdomen with rounded tips in males, much shorter and pointed in females. Lateral lobes of male pronotum entirely black. Hind femora with a central white spot on outside. Hind tibiae reddish-orange, black at base.

Range: Similar to *C. abdominalis*, but extending further south. Southern range extends from South Carolina west to Colorado.

Wisconsin distribution: Widespread across the state.

State rank: S5.

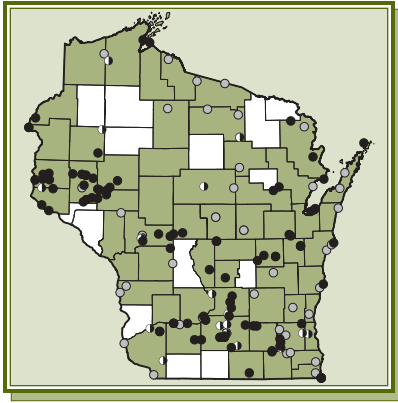
Habitat: Thickets and edges of dry open woods.

Historical notes: There is 1 specimen from the ACNAT collected in 1900-labeled "Wis".

Discussion: Adults are collected from late June to October, most commonly in July and August.

Specimens examined: Over 100 specimens from 74 sites.

References: Hebard (1932), Cantrall (1968), Otte (1981), Vickery and Kevan (1985).



Chorthippus curtipennis
(Harris)

Marsh Meadow Grasshopper

Description: Small, light brown grasshopper with forewings to end of abdomen in males, shorter in females. Head strongly slanted. Body dark on the sides and pale yellow below. Hind tibiae yellow to straw colored.

Range: Widespread across most of North America, but absent from the southeastern U.S.

Wisconsin distribution: Widespread, most likely occurring in every county of the state.

State rank: S5.

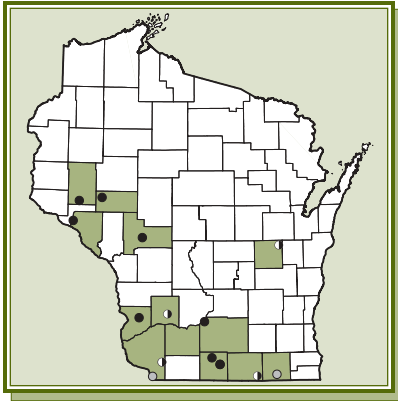
Habitat: Highly variable, but common in low wet prairies. Bomar (2001) reported this as a common species in newly constructed prairies.

Discussion: Adults are collected in late June to October. This species is very mobile, commonly found in urban areas on warm dry windy days in late August through September.

Specimens examined: Specimens recorded from 189 sites.

References: Hebard (1932), Cantrall (1968), Otte (1981), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 34



Dichromomorpha viridis (Scudder)

Shortwinged Green Grasshopper

Description: Medium-sized grasshopper. Body color green and/or brown. Females may be unicolorous but the male dorsum is usually lighter than the sides. Head strongly slanted. Forewings usually shorter than abdomen.

Range: Eastern half of U.S., extending into central Mexico.

Wisconsin distribution: In counties at or below the Tension Zone.

State rank: S2/S4.

Habitat: Preferential to grasses at the edges of woodlands, most commonly found in association with heavy soils.

Historical note: One specimen stored at the INHS is labeled "Geneva Lake, Williams Bay, Oct 11, 1881". This is the oldest Wisconsin grasshopper collection record that we found.

Discussion: Adults were collected from July to October. No macropterous specimens were found.

Specimens examined: 16 males, 9 females from 19 sites.

References: Hebard (1932), Cantrall (1968), Otte (1981), Vickery and Kevan (1985).



see Color Plate,
p. 33

GIFF BEATON



Eritettix simplex

(Scudder)

Velvetstriped Grasshopper

Description: Slender, medium-sized grasshopper with wings extending to end of abdomen, head with obvious slant. Body tan with brown markings in females, brown and green in males. Pronotum with three distinct longitudinal carinae (ridges).

Range: Two main regions: eastern slopes of the Appalachians eastward through Tennessee, and Central Great Plains from southern Canada to central Mexico. Current distribution maps suggest that these are not disjunct populations.

Wisconsin distribution: Most recent collections are from remnant dry prairie in Dane and Grant counties in southern Wisconsin.

State rank: S2/S3.

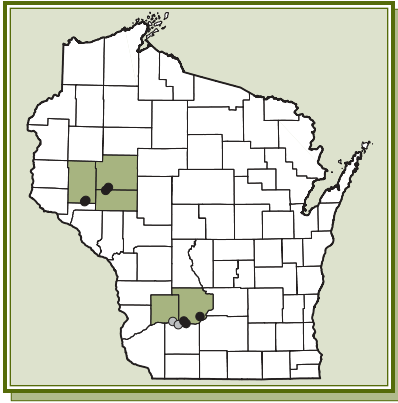
Habitat: Short to mixed grass stands, associated with remnant prairies. Somes (1914) infers a relationship with "low Wild sage, *Artemesia*", but this was not observed in our collections.

Discussion: Nymphs overwinter and adults are generally collected from May to early July.

Specimens examined: 30 specimens from 13 sites.

References: Somes (1914), Hebard (1932,1934), Otte (1981), Vickery and Kevan (1985).

see Color Plate, p. 34



Mermiria bivittata

(Serville)

Twostriped Slantfaced
Grasshopper

Description: Large, slender grasshopper with head dramatically slanted. With ensiform antennae. Forewings to end of abdomen, or nearly so. Dark brown band runs from behind the eye across the pronotum. Often referred to as a “toothpick” grasshopper.

Range: Widespread from the Carolinas to southern California. Its most prominent range is Central Great Plains, from southern Canada to central Mexico

Wisconsin distribution: Most recent collections from Dunn, Chippewa, Eau Claire and Sauk counties south of the Tension Zone. These specimens greatly expand the reported range of this species in the Midwest.

State rank: S2.

Habitat: Associated with oak barrens, which in Wisconsin are dominated by black oak (*Quercus velutina*), and Hill’s oak (*Q. ellipsoidalis*), and remnant prairies. Northern specimens were found hanging from the branches of Hill’s oak.

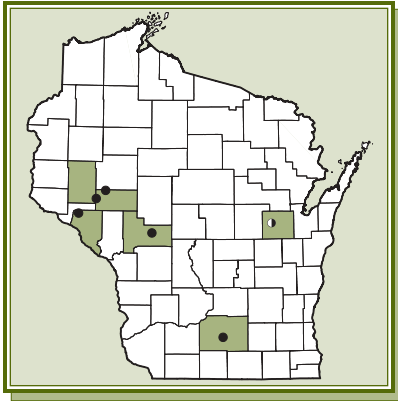
Discussion: Adults are collected from July to September.

Specimens examined: 20 specimens from 11 sites.

References: Hebard (1932, 1934), Otte (1981), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 33





Opeia obscura (Thomas)
Obscure Grasshopper

Description: Small to medium-sized tan grasshopper, possibly with green markings on pronotum and forewings. Head strongly slanted. Forewings to near end of abdomen. Dark line present on top third of hind femora.

Range: Minnesota to California; most records are from the Great Plains from southern Canada to central Mexico

Wisconsin distribution: South of the Tension Zone on light soils. Wisconsin collections greatly expand the reported range of this species. The specimen from dry prairie in Outagamie County may be the easternmost station for *O. obscura*.

State rank: S2/S3.

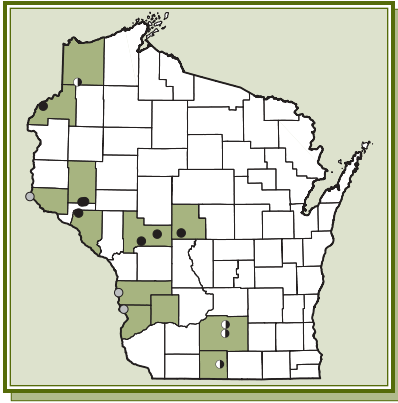
Habitat: Dry prairie remnants, namely those sites that have full sun and the presence of bare ground and short grasses. Two collection sites are southwest-facing hills. *O. obscura* is associated with blue grama grass (*Bouteloua gracilis*) in the Great Plains.

Discussion: Most of the adults were collected in July from western Wisconsin. The Dane County specimen was collected from the UW Arboretum oak forest edge on August 21, 1997.

Specimens examined: 6 specimens from 6 sites.

References: Otte (1981), Vickery and Kevan (1985), Pfadt (1994).





Orphulella pelidna
(Burmeister)

Spottedwinged Grasshopper

Description: Small to medium-sized grasshopper. Body color green or brown. Head with an obvious slant. Lateral pronotal carinae cut by two or three sulci. Forewings extend beyond hind femora.

Range: Atlantic Coastal Plain to southern California, with scattered sites in western river valleys and the northern Midwest.

Wisconsin distribution: Western half of state.

State rank: S2/S3.

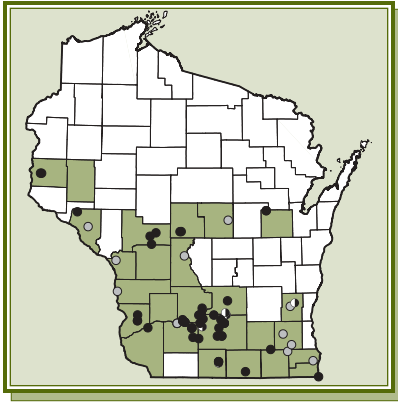
Habitat: Seven of 14 sites in Wisconsin are sandy upland associated with ephemeral pools, freshwater marsh, or river terrace. The others are dry prairie and pasture.

Discussion: Adults are collected throughout July and August. The Wood County specimen was collected July 1, 1998.

Specimens examined: 12 males, 2 females from 14 sites.

References: Froeschner (1954), Cantrall (1968), Otte (1981), Vickery and Kevan (1985).

see Color Plate, p. 34



Orphulella speciosa

(Scudder)

Pasture Grasshopper

Description: Small grasshopper. Body color variable, but often males green and females brown. Head with an obvious slant. Lateral pronotal carinae cut by one sulcus. Forewings extend to knees of hind femora.

Range: Central Plains from Mexico to southern Canada, east to Maine north of the Appalachians.

Wisconsin distribution: Widespread below the Tension Zone.

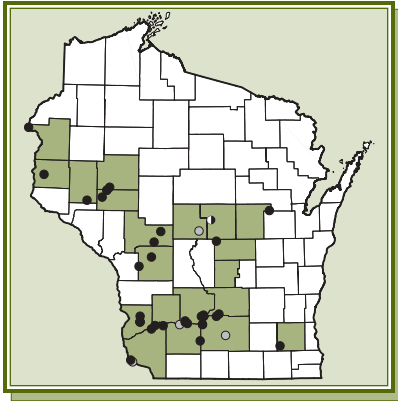
State rank: S5.

Habitat: Dry to dry-mesic prairies, pine/oak barrens, but highly variable.

Discussion: Adults are collected from July to September, most from late July to mid-August. The Washington County specimen was collected June 18, 1983.

Specimens examined: Over 100 specimens from 73 sites.

References: Froeschner (1954), Cantrall (1968), Otte (1981), Vickery and Kevan (1985).



*Pseudopomala
brachyptera* (Scudder)

Bunchgrass Grasshopper

Description: "The Toothpick". Long, narrow, tan/brown grasshopper with strongly slanted head and strongly ensiform antennae. Wings of males do not reach ends of hind femora, shorter in females.

Range: Primarily southwestern Canada and northern U.S. south to Utah, Oklahoma, and New Jersey.

Wisconsin distribution: South of the Tension Zone.

State rank: S5.

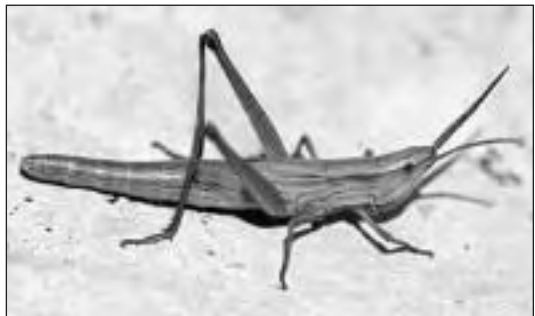
Habitat: Highly variable, from remnant bluff prairies, sand prairies, and pine barrens to weedy roadside and forest edges.

Discussion: Adults collected from mid-June to early September. Most (39 of 46) are from the latest collection period and are never abundant where found. We have not observed this species in moist habitats in Wisconsin as has been reported elsewhere (Cantrall 1968, Vickery and Kevan 1985).

Specimens examined: 40 males, 6 females from 35 sites.

References: Froeschner (1954), Cantrall (1968), Otte (1981), Vickery and Kevan (1985).

see Color Plate, p. 34



DAN JOHNSON



Syrbula admirabilis (Uhler)

Handsome Grasshopper

Description: Large, long-winged grasshopper with strongly slanted head. Variable in color from brown to green, but with a line of spots along the forewings. Male has a white marking behind eye and along lower edge of pronotum. Antennae slightly clavate. Hind femora with pale bands near knees.

Range: Mexico across southeastern U.S. and north to Iowa, Wisconsin, Michigan, Pennsylvania, and New Jersey.

Wisconsin distribution: Southwest corner of the state in Crawford, Grant, and Iowa counties.

State rank: S2?.

Habitat: Three of the four sites collected 1998-1999 are dry prairie on high bluffs in the Driftless Area. No habitat information is available for the Iowa County site, though the area has similar topography.

Discussion: The Hogback Prairie in Crawford County, Wisconsin and Gratiot County, Michigan (Cantrall 1968) are the only known sites for this species above the 43rd Parallel. The species may be limited to high "islands" of suitable habitat at the northern border of the range. Adults were collected in Wisconsin from August 12 to September 7.

Specimens examined: 3 males, 1 female from 4 sites.

References: Hebard (1934), Cantrall (1968), Otte (1981).

see Color Plate, p. 33



KATHRYN KIRK

GRASSHOPPER SPECIES ACCOUNTS



GIFF BEATON

Acridinae

Gomphocerinae

CYRTACANTHACRIDINAE

Melanoplinae

Oedipodinae



CYRTACANTHACRIDINAE

Schistocerca alutacea
(Harris)

Leathercolored Bird Grasshopper

Description: Large long-winged grasshopper, yellowish-brown, always with a pale dorsal stripe. Hind tibiae yellow or brown with black-tipped yellow spines.

Range: Gulf and Atlantic Coast Plain states north to eastern Oklahoma and southern New England. Scattered records from coastal areas of Wisconsin, Michigan, Pennsylvania, and New York.

Wisconsin distribution: One specimen from MPM labeled "Milwaukee County, 1906".

State rank: SH?.

Habitat: Marshes, swamps, moist thickets, and forest edges. Hubbell (1960) notes that the Great Lakes records are nearly all from sandy regions in proximity to moist habitats, which all but eliminates site elements as an aid in separating this species from *S. lineata* for collections along Lake Michigan.

Discussion: The taxonomy for this species remains disorganized, with six subspecies being recognized by Dirsh (1974). We have relied on the work of Hubbell (1960) and Song (2004) for identification and nomenclature. Hubbell (1960) accepts the nearby Lake County, Illinois records from southern Lake Michigan but reassigns Iowa, Minnesota, and all other Illinois records of *S. alutacea* to *S. lineata*. Dirsh (1974), on the other hand, recognizes three subspecies from Wisconsin, including *S. alutacea alutacea*, *S. a. lineata*, and *S. a. rubignosa*. Song (2004) has revived these as three valid species and does not recognize *S. alutacea* from Illinois. Bomar (2001) identifies his specimens from Western Wisconsin as *S. alutacea*, but upon further inspection now considers these to be *S. lineata*.

Specimens examined: 35 males, 26 females.

References: Hebard (1934), Hubbell (1960), Dirsh (1974), Song (2004).



Schistocerca americana (Drury)

American Grasshopper

Description: Large, yellow-brown grasshopper, forewings with distinct large brown spots extend well beyond abdomen. Head and body with a pale median stripe. Hind tibiae red.

Range: Breeding from southern U.S. to South America; migrants to Massachusetts, southern Ontario, Michigan, and central Minnesota.

Wisconsin distribution: Dane and Milwaukee counties.

State rank: SH?.

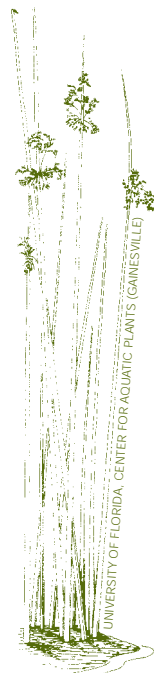
Habitat: Specimen labels did not specify, but Blatchley (1920) found *S. americana* in wet meadows, marshes, and other damp locales in northern Indiana and the habitat may be similar in Wisconsin.

Discussion: The taxonomy for this species remains disorganized, with 11 subspecies being recognized in the most recent monograph by Dirsh (1974). Wisconsin specimens date from the early 1900s and are probably migrants.

Specimens examined: 2 males, 3 females.

References: Blatchley (1920), Vickery and Kevan (1985).

see Color Plate, p. 35





Schistocerca damnifica (Saussure)

Mischievous Bird Grasshopper

Description: Large long-winged grasshopper, yet smallest of the Wisconsin *Schistocerca*. Body short and stocky, reddish brown with a brown line on head and pronotum. Body yellow below. Pronotum narrower than that of other *Schistocerca* and distinctly tectate.

Range: Breeds from Florida to Texas in southeastern U.S., north to Ohio. Migrates to Massachusetts, southern Ontario, Michigan, and Minnesota.

Wisconsin distribution: Two specimens from Milwaukee County collected in 1905 by W. Wheeler.

State rank: SH?.

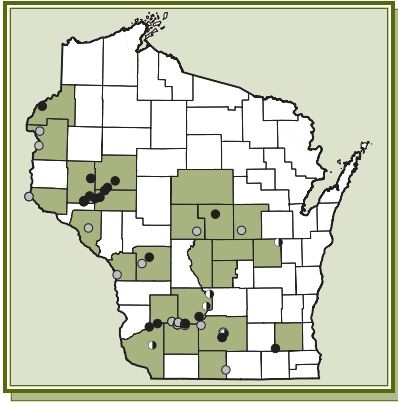
Habitat: Recorded on sandy soils in dry open pine and oak woods.

Discussion: Only two specimens, found in the Milwaukee Public Museum, most likely representing isolated migrants from the eastern U.S.

Specimens examined: 2 males.

References: Hubbell (1960), Dirsh (1974).





Schistocerca lineata

Scudder

Spotted Bird Grasshopper

Description: Large, yellowish-brown grasshopper, may have a pale dorsal stripe. Hind tibiae may have some black coloration. Fore and middle femora of males distinctly inflated.

Range: Mexico, Colorado, South Dakota, central Midwest, scattered stations of the eastern Appalachians, and North Carolina along the Atlantic Coastal Plain to southern New England.

Wisconsin distribution: Along the Tension Zone and south in Wisconsin.

State rank: S5.

Habitat: Sand barrens, sandblows, river terraces on sand, dry prairie, and a few sites in dry forest openings.

Discussion: We re-examined superficial markings and relative body measurements as dictated by Hubbell (1960) on a majority of the 35 male and 26 female specimens identified as *S. alutacea*, leading us to believe that most, if not all, belong to *S. lineata*. A few specimens labeled "*S. alutacea rubiginosa*" were also assigned to *S. lineata*. Adults were collected July 2 through October 14.

Specimens examined: 79 males, 49 females.

References: Hubbell (1960), Vickery and Kevan (1984), Song (2004).

see Color Plate, p. 35



Notes and Sketches

GRASSHOPPER

SPECIES ACCOUNTS



DAN JOHNSON

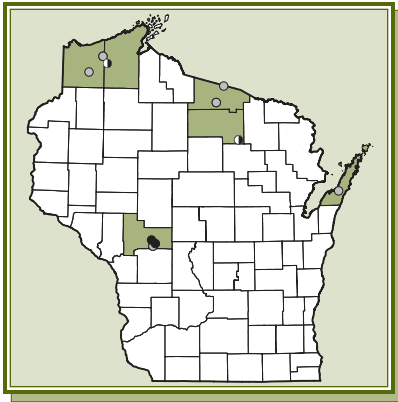
Acridinae

Gomphocerinae

Cyrtacanthacridinae

MELANOPLINAE

Oedipodinae



MELANOPLINAE

*Booneacris glacialis
canadensis* (E.M. Walker)

Northern Wingless Grasshopper

Description: Wingless, green, medium-sized grasshopper. Hind femora banded and coral red below and inside. Tibiae blue-green.

Range: Ontario and Minnesota east to New Brunswick. The subspecies is found in Ontario, Minnesota, Wisconsin, Michigan, and western Quebec.

Wisconsin distribution: Northern counties and Jackson County in the Central Sands.

State rank: S1/S2.

Habitat: Most sites are within jack pine barrens habitat or pine forest. Known from sphagnum bogs elsewhere, but little collecting has been conducted in these habitats in Wisconsin.

Discussion: The species was collected only twice during the period of this study and only in the central part of the state. Cantrall (1968) reported it as common in the Upper Peninsula of Michigan and abundant on wild blackberry in northern Wisconsin.

Specimens examined: 32 males, 37 females from 10 sites.

References: Cantrall (1968), Vickery and Kevan (1985).

see *Color Plate*, p. 37



KATHRYN KIRK



Dendrotettix quercus

Packard

Post Oak Grasshopper

Description: Short-winged, medium-sized, brown grasshopper, with a large head. Femora red below. Tibiae green, with yellow basal rings.

Range: Nebraska and Texas east to Tennessee and southern Ontario.

Wisconsin distribution: Central Plains and Grant County in the Southwest.

State rank: S3/S4.

Habitat: Dry to dry-mesic oak forests. Recorded on bur oak (*Quercus macrocarpa*), northern red oak (*Q. rubra*), and hazel (*Corylus americana*) in Wisconsin (Valek and Coppel 1972a).

Historical note: No collections were made prior to 1947.

Discussion: *D. quercus* population explosions have been implicated in defoliation of young oaks. Macropterous individuals were collected in the Central Plains in August of 1967 and 1977. This is an arboreal species that often may be overlooked in the forest.

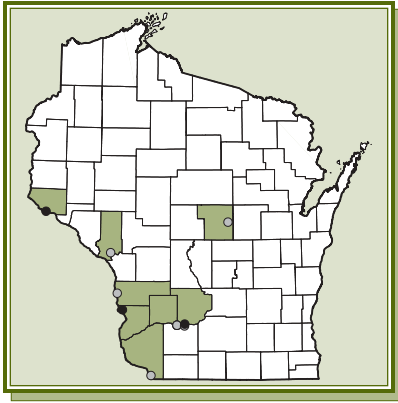
Specimens examined: 47 males, 27 females from 22+ sites.

References: Valek and Coppel (1972a, 1972b), Vickery and Kevan (1985).

see *Color Plate*, p. 37



BART DREES



*Hesperotettix viridis
pratensis* Scudder

Purplestriped Grasshopper

Description: Medium-sized green grasshopper, with orange bands on femora and blue-green tibiae. Narrow forewings do not reach end of abdomen.

Range: From central Mexico to British Columbia and western Ontario across the U.S., possibly with the exception of the most northeastern states. The subspecies *H. v. pratensis* covers the northern portion of the range south to Oklahoma.

Wisconsin distribution: Western Uplands.

State rank: S2?.

Habitat: Dry prairie and sand barrens associated with major rivers.

Discussion: Nine of the 13 collections were prior to 1920. The three recent collections were from sand terraces along the Mississippi and Wisconsin Rivers, and a bluff prairie along the Mississippi River. Cantrall (1968) reported the species from Michigan, including along the Wisconsin border with the Upper Peninsula, so we expect to find individuals farther east and north of the recorded counties. Adults are collected July 5-August 28.

Specimens examined: 23 males, 14 females from 9 sites.

References: Hart and Gleason (1907), Cantrall (1968), Vickery and Kevan (1985).

see Color Plate, p. 37



Hesperotettix speciosus
(Scudder)

Western Grassgreen
Grasshopper

Description: Medium-sized, robust-bodied, green grasshopper with a central pink stripe on pronotum. Forewings do not reach end of abdomen. Dorsal surface of femora red. Tibiae green.

Range: New Mexico and Texas to Montana and east to Illinois, Iowa, and Minnesota.

Wisconsin distribution: One specimen collected July 31, 2000, from Sauk County.

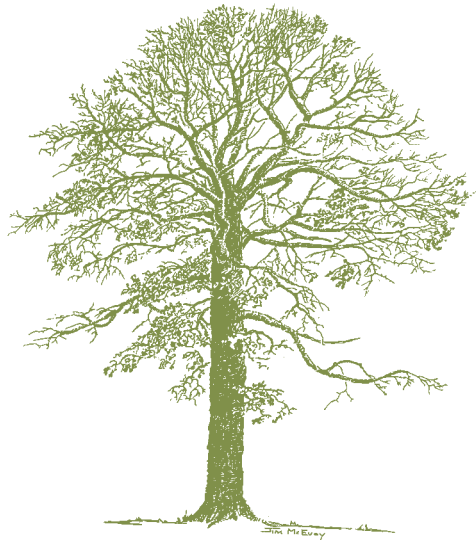
State rank: S1/S2.

Habitat: The site is at the edge of oak woods on a south-facing bluff above extensive sand prairie on the terrace of the Wisconsin River.

Discussion: There are few sites reported for this species in the Upper Midwest. Somes (1914) reported *H. speciosus* along the Mississippi River in Minnesota and northern Iowa. Hart and Gleason (1907) found it along the Illinois River.

Specimens examined: 1.

References: Hart and Gleason (1907), Somes (1914), Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).





*Melanoplus
angustipennis* (Dodge)

Narrow-winged Sand
Grasshopper

Description: Long-winged, medium-sized grasshopper of gray and yellow color, with narrow forewings and red or blue tibiae.

Range: Alberta and Ontario south to New Mexico, Texas, and the fall-line Sandhills of the Carolinas.

Wisconsin distribution: Represented in all the large areas of sand deposits in the Northern Highlands and the Central Plains. Also found on sand terraces of the Mississippi, Wisconsin, and Chippewa rivers and Lake Michigan dunes.

State rank: S4?.

Habitat: Sand prairie, dunes, and pine/oak barrens.

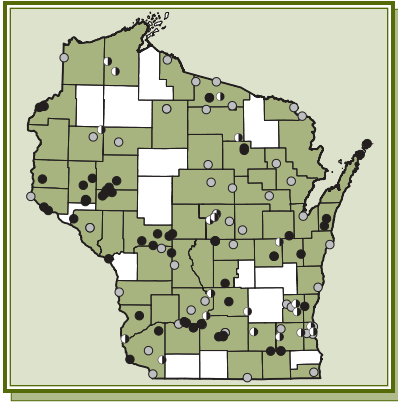
Historical note: A 1912 specimen labeled "Kenosha dune region" is from a narrow sand dune area of the southern Lake Michigan shoreline created by glacial Lake Chicago. This area is now highly disturbed and existence of the species at the site is unlikely.

Discussion: Probably secure in large areas of sandy habitat in the state.

Specimens examined: 64 males, 22 females from 42 sites.

References: Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).

see Color Plate, p. 35



Melanoplus bivittatus
(Say)

Twostriped Grasshopper

Description: Large grasshopper with two converging pale lines on dorsal surface of head, pronotum, and forewings. Forewings extend to apex of abdomen or may be slightly shorter.

Range: Widely distributed across North America.

Wisconsin distribution: Statewide.

State rank: S5.

Habitat: Herbaceous vegetation in forest, grassland, roadside, and old field.

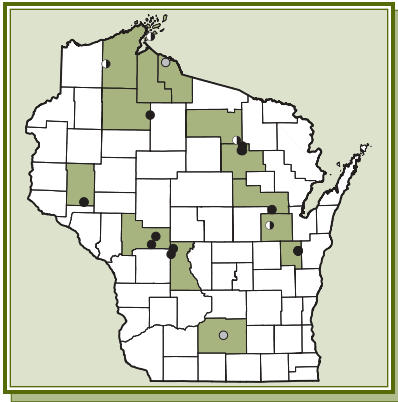
Discussion: This is a common and abundant species that occasionally may become an agricultural pest. Adults usually are present July through September, with an early collection date of June 10 in Dunn County.

Specimens examined: 151 collection records, 54 of these after 1993.

References: Blatchley (1920), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 36





*Melanoplus borealis
borealis* (Fieber)

Northern Grasshopper

Description: Small to medium-sized dark grasshopper, with forewings extending from $\frac{3}{4}$ the length to near apex of abdomen. Femora red/orange below. Tibiae reddish to yellowish.

Range: Across Canada south to Minnesota, Wisconsin, Iowa, Pennsylvania, and Ohio.

Wisconsin distribution: Scattered records south to the Central Plains.

State rank: S3?.

Habitat: Marsh, bog, and grassy sandy areas in coniferous forest.

Historical Note: Hebard (1934) identified a specimen from Dane County in 1912, now at ACNAT. The species may have ranged further south in the state when wetland habitats were less fragmented than they are today.

Discussion: Wisconsin collections are from June 10 to August 15.

Specimens examined: 25 males, 19 females from 17 sites.

References: Somes (1914), Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).

see Color Plate, p. 37





Melanoplus bruneri

Scudder

Bruner's Grasshopper

Description: Long-winged, medium-sized, brown grasshopper, with hump on the sternum similar to *M. sanguinipes*. Tibiae red or usually pink.

Range: Alaska to New Brunswick, south in mountain meadows into northern Arizona and New Mexico, eastward to Iowa, northern Minnesota, Wisconsin, and Michigan.

Wisconsin distribution: Ashland County in the Lake Superior Lowland is the only recent collection (1996).

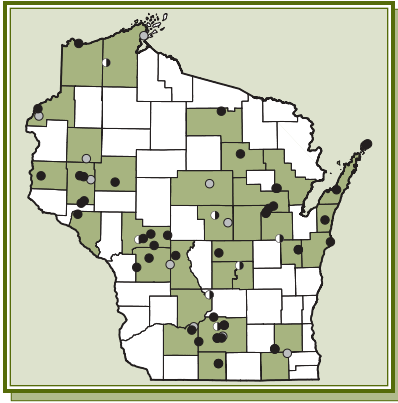
State rank: S1/S2.

Habitat: Known from shrubby areas of the Upper Peninsula and Isle Royale in Michigan. The Ashland County site is an undisturbed coastal barrier sand spit in Lake Superior with low shrubs and pines on a system of beaches and dunes.

Discussion: Vilas, Iron, and Marathon counties were collected before 1920. Hebard identified a specimen in ACNAT taken in 1914 from Dane County in the southern part of the state. The species may have been more widespread in the early 1900s. Froeschner (1954) reported its presence in western Iowa, and Pfadt (1994) reported an outbreak occurred in north central Minnesota in 1921.

Specimens examined: 4.

References: Blatchley (1920), Hebard (1934), Froeschner (1954), Vickery and Kevan (1985), Pfadt (1994).



Melanoplus confusus

Scudder

Little Pasture Grasshopper

Description: Long-winged, medium-sized, grayish grasshopper, with shiny black patch behind eye and a particularly thick prosternal tubercle. Tibiae color variable.

Range: British Columbia to Maine, south to Virginia, Kentucky, and Texas.

Wisconsin distribution: Widely distributed across the state.

State rank: S5.

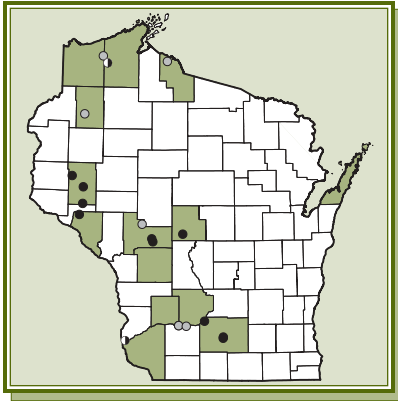
Habitat: Found in a wide range of habitats, including remnant prairie, pine and oak barrens, dry forest, sand beach, disturbed areas, and old fields.

Discussion: Both red and blue-legged individuals are present in Wisconsin. An early summer species, adults were found May 23 in Jackson County.

Specimens examined: 65.

References: Somes (1914), Blatchley (1920), Froeschner (1954), Vickery and Kevan (1985), Pfadt (1994).





Melanoplus dawsoni
(Scudder)

Dawson's Grasshopper

Description: Small, robust-bodied, short-winged brown grasshopper that is bright yellow below. Abdomen ringed with black and yellow. Hind tibiae red.

Range: Great Basin in the West to the Great Plains, northern Midwest, and east to New England.

Wisconsin distribution: Western half of the state.

State rank: S2/S4.

Habitat: Open areas such as pine barrens and brushy prairie. Bomar (2001) observed this species to be a common inhabitant of reconstructed prairies in Wisconsin.

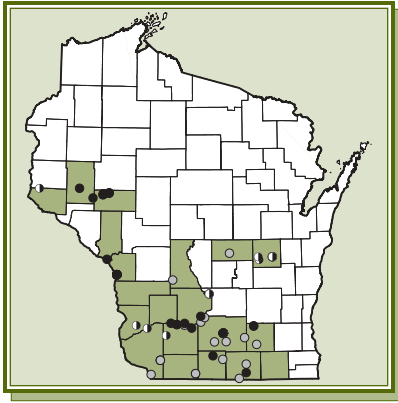
Historical note: Cantrall (1968) lists the species from several sites in the Upper Peninsula of Michigan; however, the only collection from the eastern portion of Wisconsin is one male collected Aug. 15, 1920, in Door County.

Discussion: Hebard (1934) reported a very high percentage of long-winged individuals from northwestern Minnesota. Two of the 44 specimens we examined are macropterous, both from northwestern Wisconsin, collected in 1939 and 1966.

Specimens examined: 32 males, 18 females from 20 sites.

References: Blatchley (1920), Hebard (1934), Vickery and Kevan (1985), Pfadt (1994), Bomar (2001).

see Color Plate, p. 37



*Melanoplus
differentialis
differentialis* (Thomas)

Differential Grasshopper

Description: Long-winged, large-sized grasshopper, typically yellow-brown in color, with distinctive herringbone pattern on hind femora.

Range: Northern U.S. border to Mexico, east to the Blue Ridge Mountains and the New Jersey coast.

Wisconsin distribution: Common south of the Tension Zone.

State rank: S5.

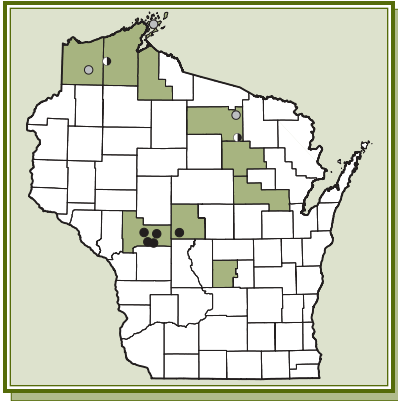
Habitat: Originally restricted to tall vegetation in meadows, swales, and river bottoms, but now widely distributed in weedy, moist habitats, roadsides, and edges of agricultural fields.

Discussion: Adults are collected from June to October. Most Wisconsin collections are from within towns and cities and the species has a history as an agricultural pest.

Specimens examined: 99.

References: Blatchley (1920), Hebard (1934), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 36



Melanoplus fasciatus

(F. Walker)

Huckleberry Grasshopper

Description: Small to medium-sized dark grasshopper, with forewings extending from 2/3 the length to near apex of abdomen. Femora red/orange below and inside and tibiae dull red. Outer surface of femora conspicuously banded.

Range: Alaska to Newfoundland, south to New Jersey, northern Indiana, and Colorado.

Wisconsin distribution: Northern counties and the Central Sands.

State rank: S2?.

Habitat: Hart and Gleason (1907) report this species on blackjack oak (*Q. marilandica*) brush in Illinois. Wisconsin habitats are sandy woods and pine/oak barrens with jack pine, blueberry, sweet fern, and lupine.

Historical Note: The specimen from Ashland County was collected on the Apostle Islands in Lake Superior by the MPM Expedition of 1907. This is the only Wisconsin specimen we have seen from the islands.

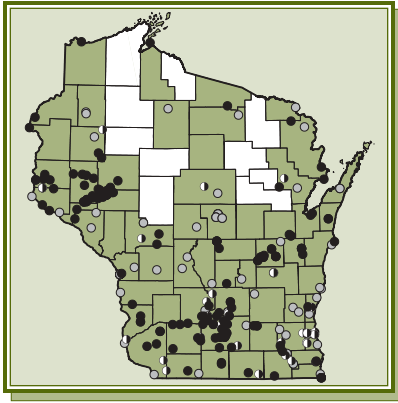
Discussion: *M. fasciatus* is a sedentary species on shrubs. Recent records are only from Jackson and Wood counties in the Central Plains. Adults are collected June 20 through August 24.

Specimens examined: 9 males, 8 females from 13 sites.

References: Hart and Gleason (1907), Somes (1914), Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).



DAN JOHNSON



Melanoplus femurrubrum
(DeGeer)

Redlegged Grasshopper

Description: Long-winged, medium-sized grasshopper of gray and yellow color, typically with red tibiae. Femora have a dark longitudinal stripe in the upper portion. Males distinguished by the bulbous abdominal apex.

Range: North America, except the far North and high mountains. It is especially abundant in southern Wisconsin and Minnesota, and northern Illinois and Iowa, where large populations may develop in response to hot, dry weather (Pfadt 1994).

Wisconsin distribution: Widespread throughout the state.

State rank: S5.

Habitat: Grasslands, roadsides, woods edge, backyards, old fields, wetlands, reconstructed prairies. *M. femurrubrum* is a colonizer of disturbed habitat and may become an occasional pest of crops and gardens.

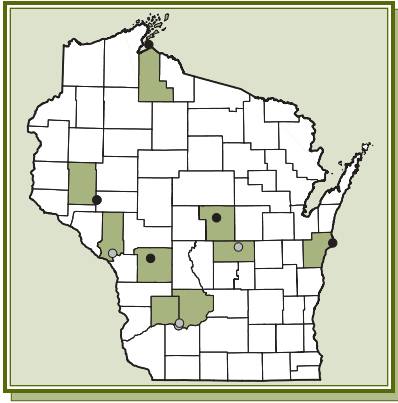
Discussion: *M. femurrubrum* is very common and abundant, although there is only one current record from the Northern Highlands region.

Specimens examined: 318.

References: Blatchley (1920), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 36





Melanoplus flavidus

Scudder

Bluelegged Grasshopper

Description: Long-winged, medium to large-sized yellowish grasshopper, with blue tibiae.

Range: Alberta to northwest Indiana, south to Colorado and Kansas.

Wisconsin distribution: Scattered counties on high quality sand habitat.

State rank: S2/S3.

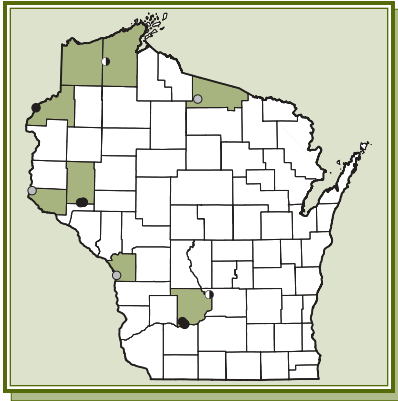
Global Ranking: G4.

Habitat: *M. flavidus* is a xerophytic species: “..as one approaches and enters the wind-excavated hollows of the apex (of the dunes), *M. flavidus* becomes most abundant” (Hart and Gleason 1907). Wisconsin individuals have been found in sandblows, dunes, open sand prairies, and the Ashland County barrier sand spit described under *M. bruneri*.

Discussion: Much of the Wisconsin land that used to support active dunes and sandblows is overgrown with trees or covered by buildings or pine plantations. Those areas that remain are often heavily disturbed by recreational vehicles. Michigan also ranks *M. flavidus* as a Special Concern species (NatureServe April 2001).

Specimens examined: 11 males, 6 females from 10 sites.

References: Hart and Gleason (1907), Blatchley (1920), Vickery and Kevan (1985), NHI (2001), Natureserve (2001).



*Melanoplus foedus
fluviatilis* Bruner

Sandbar Grasshopper

Description: Long-winged, medium-sized dark grasshopper of greenish brown or gray, with a brown central band on the head and pronotum. Tibiae blue or purple.

Range: Montana, Wyoming, and New Mexico to Iowa, Illinois, and Wisconsin.

Wisconsin distribution: Western half of the state.

State rank: S2/S3.

Habitat: Sand prairie, sandblows, grassy openings in pines and oak savanna.

Discussion: *Melanoplus foedus* has been known almost exclusively from west of the Mississippi River, where this subspecies is found in river bottom habitats. In Illinois, it was collected along the Mississippi River at the edge of a sandblow (Hart and Gleason 1907). All but two Wisconsin records are along major rivers: the Mississippi, Wisconsin, Chippewa, and St. Croix. Adults are found from July through mid-September. Two males and a female from Vilas County labeled *M. packardii* are included here until such time as the identification can be clarified.

Specimens examined: 17 males, 18 females from 11 sites.

References: Hart and Gleason (1907), Blatchley (1920), Vickery and Kevan (1985).



Melanoplus gladstoni
(Scudder)

Gladston's Grasshopper

Description: Long-winged, medium-sized, dark brown grasshopper, with femora flattened near the base and distinctly banded. Forewings with a line of spots. Tibiae red.

Range: Alberta south to Mexico, east to Iowa and western Wisconsin.

Wisconsin distribution: Dunn and Chippewa counties.

State rank: S2?.

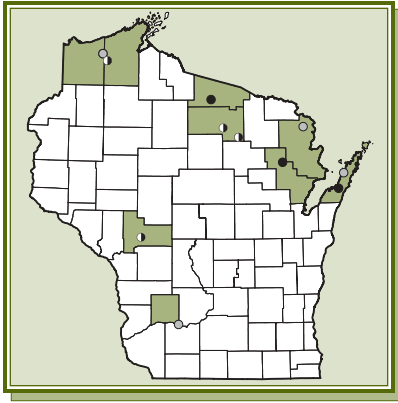
Habitat: Dry grassland, "cobble flats" along the Chippewa River.

Discussion: The two adults were collected in August. These specimens represent an eastward extension of the known range of this species. The flattened hind femur is not easily recognizable in the Wisconsin specimens.

Specimens examined: 1 male, 1 female from 2 sites.

References: Vickery and Kevan (1985), Pfadt (1994), Bomar (2001).





Melanoplus islandicus

Blatchley

Forest Grasshopper

Description: Small short-winged brown and yellow-green grasshopper, with broad pale stripe the length of dorsal abdomen. Tibiae red.

Range: Manitoba, Quebec south to Virginia and Iowa.

Wisconsin distribution: Only one recent collection, Vilas County, though there are several earlier records from the central Northern Highland Region.

State rank: S2/S4.

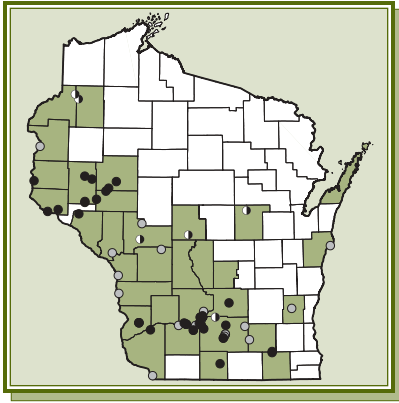
Habitat: Northern-mesic and dry-mesic forest of the interior, grassy opening in jack pine forest of the Lake Superior Coastal Plain.

Historical note: There is one southern Wisconsin record from Lone Rock in 1907.

Discussion: *M. islandicus* is a northern forest species. Vickery and Kevan (1985) state that the colonies are usually small and scattered. Cantrall (1968) calls it "relict, local, and rare" in the Lower Peninsula of Michigan.

Specimens examined: 10 males, 10 females from 10 sites.

References: Blatchley (1920), Cantrall (1968), Vickery and Kevan (1985).



*Melanoplus keeleri
luridus* (Dodge)

Keeler's Grasshopper

Description: Long-winged, medium-sized grasshopper, with red tibiae and a dark stripe on the femora narrowing toward the base.

Range: Alberta to Nevada and Texas, east across the U.S.

Wisconsin distribution: South, central, and western Wisconsin.

State rank: S5.

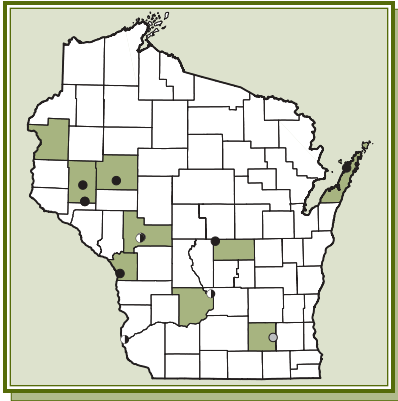
Habitat: Sand barrens, dry prairie, pine barrens, and oak openings.

Discussion: Half of the collection records (35 of 71) are from the most recent collection period.

Specimens examined: 71 males, 32 females from 58 sites.

References: Blatchley (1920), Vickery and Kevan (1985), Pfadt (1994).





*Melanoplus punctulatus
griseus* (Thomas)

Pinetree (Grizzly) Spurthroat
Grasshopper

Description: Long-winged, medium-bodied, dark, speckled grasshopper, with large protruding eyes and dull red tibiae.

Range: North Dakota and Ontario to Pennsylvania, south to Arizona and Texas.

Wisconsin distribution: Western Central Plain and Western Uplands, including one site along the forested Niagara Escarpment above Lake Michigan.

State rank: S3?.

Global rank: G4.

Habitat: Arboreal species of pine forest, swamp conifers (tamaracks), and perhaps oaks in the Southwest. Specimens are occasionally collected at the prairie-forest border, most likely in association with thickets and bramble. The only southeastern Wisconsin record is from an area that was probably good conifer swamp along the Kettle Moraine in 1917. *M. punctulatus griseus* occurs on tamarack in southern Michigan (Cantrall 1968).

Discussion: *M. punctulatus griseus* has been recorded in Polk County "ovipositing in pine stump". Adults are collected late July to mid-October. Because of the mottled coloration, individuals may be overlooked against the gray lichen on tree trunks.

Specimens examined: 13 males, 27 females from 14 sites.

References: Cantrall (1968), Vickery and Kevan (1985).





*Melanoplus rusticus
obovatipennis* Blatchley
Obovatewinged Grasshopper

Description: Small, dark grasshopper, with short, ovate forewings. Femora faintly banded and tibiae dark olive green with a pale basal ring.

Range: Texas and Oklahoma, east to Tennessee, north to Illinois, Wisconsin, Indiana, and Ohio.

Wisconsin distribution: Grant County in the Driftless Area.

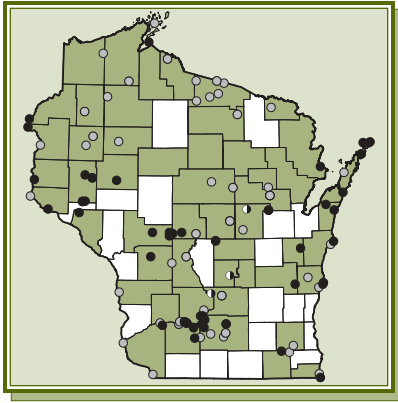
State rank: SH?.

Habitat: Reported from dry forests with oaks and wooded hillsides in other states (Hart and Gleason 1907, Blatchley 1920), though Blatchley suggests it may be found in marsh vegetation late in a dry autumn. Grant County has dry bluff prairies, oak forest, and many valleys and ridges, but the habitat information for these specimens is unknown.

Discussion: *M. rusticus obovatipennis* is a late maturing southern species. Wisconsin specimens collection dates include September 9 and October 6, 1962. Wisconsin is the northern border of the range.

Specimens examined: 1 male, 1 female.

References: Scudder (1899), Blatchley (1920), Hebard (1934).



Melanoplus sanguinipes
sanguinipes (Fabricius)

Migratory Grasshopper

Description: Long-winged, medium-bodied grasshopper of gray-brown color, with spots along forewings and a hump on the mesosternum. Distinct notch in subgenital plate. Femora red below. Tibiae red or blue.

Range: Alaska to New Brunswick, south to northern Florida and Mexico

Wisconsin distribution: Throughout the state.

State rank: S5.

Habitat: Sand barrens, pine barrens, Great Lakes dunes, dry prairie, dry-mesic prairie, sand blowouts, oak forest, pine forest, and sand river terraces.

Discussion: Records for the North Central Forest and Northern Highland regions are from 1930 to early 1950s.

Specimens examined: 149.

References: Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).

see Color Plate, p. 36



HERBERT D. POWNALL





Melanoplus scudderi
scudderi (Uhler)

Scudder's Shortwinged
Grasshopper

Description: Small, dull brown grasshopper, with short, ovate forewings. Femora unbanded and tibiae red.

Range: New England to northern Florida, west to Texas, Nebraska, Minnesota, and Ontario. Reported as local and uncommon in the northern Midwest.

Wisconsin distribution: One recent record, from a high quality Lake Michigan dune community.

State rank: S?.

Habitat: Manitowoc County sand dunes, scattered oaks, and spreading juniper; Grant County bluff brush prairie within oak forest.

Discussion: Adults were collected in August and September, but the species also was collected July 12, 1976, in Grant County and July 26, 2000, along the Lake Michigan shore. These dates are earlier than any reported in the literature.

Specimens examined: 11 males, 2 females from 4 sites.

References: Gleason and Hart (1907), Somes (1914), Blatchley (1920), Hebard (1934), Vickery and Kevan (1985).



Melanoplus stonei Rehn
Stone's Grasshopper

Description: Long-winged, medium-bodied, dark brown grasshopper, with dark red tibiae.

Range: New Brunswick and Ontario to Michigan, Wisconsin, Minnesota, and Manitoba.

Wisconsin distribution: Jackson and Manitowoc counties.

State rank: S1/S2.

Global rank: G4/G5.

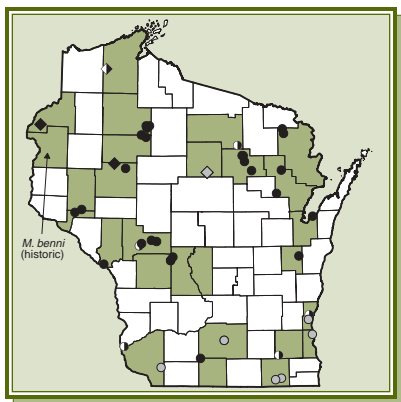
Habitat: Pine/oak barrens and northern dry-mesic forest in the Central Plain sands and Lake Michigan high quality dune habitat with scattered oaks, spreading juniper, and bearberry.

Discussion: Collected July 15, July 26, and August 26. Ontario ranks the species as Special Concern (NatureServe 2001).

Specimens examined: 7 males from 2 sites.

References: Blatchley (1920), Vickery and Kevan (1985), NatureServe (2001).





Melanoplus viridipes

Scudder

Greenlegged Grasshopper

Melanoplus benni Otte

A Grasshopper

Description: Small gray-brown grasshopper, with short elliptical forewings. Femora distinctly banded. Tibiae green, ringed with black and cream basally.

Range: Indiana, Illinois, Iowa north to Minnesota and Wisconsin.

Wisconsin distribution: Found in most regions of the state.

State rank: S5.

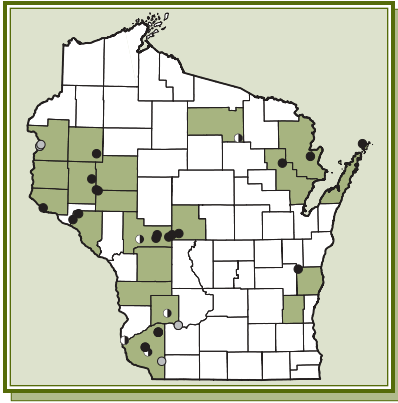
Global rank: (for species *M. viridipes*): G4.

Habitat: Common in northern mesic forest openings, dry-mesic forest openings, and pine/oak barrens.

Discussion: Otte (2002) has recently redefined this group to include two more species in Wisconsin. Specimens from the northern counties of Bayfield, Burnett, Polk, and Lincoln appear to be individuals of *M. benni* (depicted with diamonds in the map above). Another specimen from Polk County appears to be *M. eurycerus*, formerly a subspecies that ranges across the northeastern U.S. Cantrall (1970) considered Lake Michigan to be the western boundary of *M. eurycerus*, a glacial relict in Michigan. The Driftless Area may have played a role in speciation as a refugium where some populations of *M. viridipes* remained isolated within a colder environment than did those populations waiting out the glaciers' retreat in the Appalachians or the southwestern states. Otte (2002) describes the distribution of *M. viridipes* as Indiana, Illinois, Iowa, and Minnesota. *M. benni* has been identified from southern Indiana to northern Michigan and Wisconsin. All of the species in the *viridipes* group, he admits, are so similar that it is very difficult to distinguish between them. Adults are found in June and July in Wisconsin with extreme dates of May 23 and August 16.

Specimens examined: 91 males, 124 females.

References: Blatchley (1920), Hebard (1934), Cantrall (1968), Cantrall (1970), Vickery and Kevan (1985), Otte (2002).



Melanoplus walshii

Scudder

Walsh's Grasshopper

Description: Short-winged, medium-sized, dark gray-brown arboreal grasshopper, with dorsal area of forewings light brown and femora distinctly banded with a narrow extension toward its base. Hind tibiae red.

Range: Virginia, North Carolina, and Georgia north to Michigan, Wisconsin, Minnesota, and South Dakota.

Wisconsin distribution: Mostly collected in the western half of the state, also in the Northeast.

State rank: S5.

Global rank: G4/G5.

Habitat: Openings in northern dry to dry-mesic forest, pine and oak barrens, and prairie remnants.

Discussion: Brachypterous species known to oviposit in wood (Somes1914).

Specimens examined: 40 males, 30 females from 43 sites.

References: Somes (1914), Blatchley (1920), Vickery and Kevan (1985).



Paratylotropidia brunneri Scudder

A Grasshopper

Description: Short-winged, medium-sized, stout, brown and yellow grasshopper, with two distinct yellow stripes from fastigium of head to forewing tips. Pronotum has prominent lateral carinae. Hind tibiae typically deep red.

Range: Iowa, west central Illinois, possibly southeastern South Dakota ("Dakota"), Missouri, Arkansas, Texas, Oklahoma, and Kansas, disjunct to central Wisconsin.

Wisconsin distribution: Jackson County on the border of the Central Plain and the Western Upland.

State rank: S1?.

Global rank: G4/G5.

Habitat: Collected in a forested area along the Black River where the river cuts between the sandstone uplands of the Driftless Area to the west and the flat sand plain to the east. Lowland forest is interspersed with white pine-red maple stands along the high ground. *M. punctulatus griseus* and *M. viridipes* were taken from the same site.

Discussion: Rehn and Rehn (1943) state, "It is quite possible the northern boundary of the distribution of *brunneri* will be found to coincide approximately with the border of the Wisconsin glaciation." The Wisconsin site is about 12 miles in from the boundary of the Driftless Area.

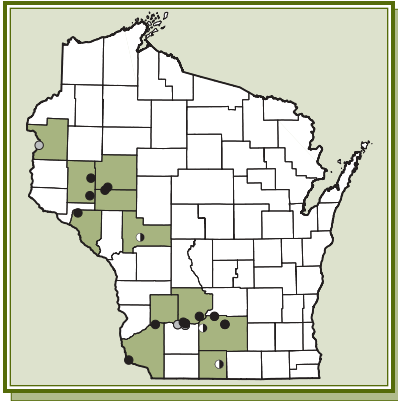
Specimens examined: 2 females, 1 male caught by malaise trap July 6, 1976. These specimens are, on average, smaller than the Iowa specimens at the ACNAT.

References: Scudder (1897), Rehn and Rehn (1943), Helfer (1953).

see *Color Plate*, p. 38



KATHRYN KIRK



*Phoetaliotes
nebrascensis* (Thomas)

Largeheaded Grasshopper

Description: Short-winged, medium-sized, light gray grasshopper, with very large head relative to size of body. Short forewings pointed and inrolled. Tibiae blue.

Range: British Columbia to Michigan and south to Texas and Arizona.

Wisconsin distribution: Western Upland portion of the Wisconsin range of tallgrass prairie.

State rank: S2/S4.

Habitat: With few exceptions, collected on dry hill prairies and sand prairie on river terraces.

Discussion: Feeds on grasses, preferring lush, tall grassy areas (Pfadt 1994). In Wisconsin, tallgrass prairie remnants are few and prairie habitat is mostly confined to rocky and sandy substrates. The species is found also in marshes and swales in Michigan, Iowa, and Minnesota (Cantrall 1968, Somes 1914). Little collecting has been done in these habitats in Wisconsin.

During this study *P. nebrascensis* was collected at 13 dry prairie sites.

Specimens examined: 70 males, 7 females from 18 sites.

References: Vickery and Kevan (1985), Pfadt (1994), NHI (2001).

see Color Plate, p. 38

GRASSHOPPER SPECIES ACCOUNTS



KATHRYN KIRK

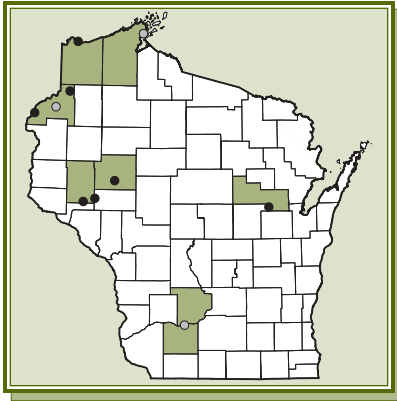
Acridinae

Gomphocerinae

Cyrtacanthacridinae

Melanoplinae

OEDIPODINAE



Arphia conspersa Scudder
Speckled Rangeland
Grasshopper

Description: Forewings dark, hind wings vary in color from red to yellow. Abdomen yellow to brown. Light yellow or straw-colored line often appears at the dorsal juncture of the forewings. Hind tibiae yellow, often with a blue or greenish tint.

Range: Most of western North America, Minnesota to California. Vickery and Kevan (1985) report one record from the Upper Peninsula of Michigan.

Wisconsin distribution: North of the Tension Zone plus Sauk and Iowa counties along the Wisconsin River.

State rank: S2.

Habitat: Generally associated with sandy gravel soils in dry prairie settings, such as open sand of northwestern pine barrens and Lake Superior sand spits.

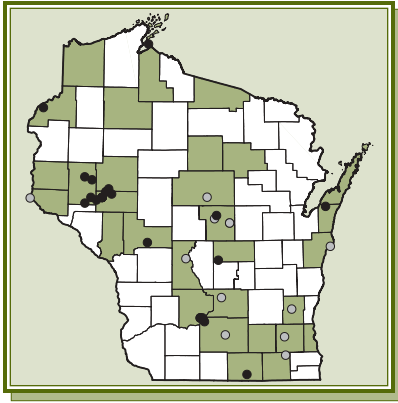
Discussion: This species overwinters as a nymph, most likely buried in dead grass. Wisconsin specimens were all collected in May and June.

Specimens examined: 9 males, 4 females from 11 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



HERBERT D. POWNALL



Arphia pseudonietana
(Thomas)

Redwinged Grasshopper

Description: Dark, large-sized grasshopper. Forewings dark brown with numerous dark speckles. Red hind wings typical across most of the range, but yellow-winged forms common across Wisconsin. Abdomen dark brown. Hind tibiae brown to black, with yellow basal ring. Inner face of hind femora black. Some individuals have a grayish-white pronotal disc.

Range: Most of western North America, east to Michigan, Ontario, and northern Ohio.

Wisconsin distribution: Widely distributed across Wisconsin.

State rank: S5.

Habitat: Similar habitat to *A. conspersa*, sandy gravel soils in dry prairie.

Discussion: The hind wings of this species are red in most populations across the range, but mixed populations occur in the upper peninsula of Michigan (Cantrall 1968). The majority of the Wisconsin specimens (114 of 132) have yellow hind wings, with one known mixed population (both red and yellow -winged individuals) from Eau Claire County. The remaining specimens are from scattered populations across the northern counties and primarily have pink hind wings, but also include red-winged and one orange-winged specimen. Adults are collected from mid-July to early October.

Specimens examined: 84 males, 55 females from 42 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).

see Color Plate, p. 39



Arphia simplex Scudder
A Grasshopper

Description: Large, gray-black grasshopper. Hind wings yellow, with a complete black margin. Inner surface of hind tibiae may be bluish. Tibiae with two white bands.

Range: South Central Great Plains north to western Iowa, disjunct to southeast Missouri and southern Ohio.

Wisconsin distribution: Collected from five counties bordering the Mississippi River in western Wisconsin.

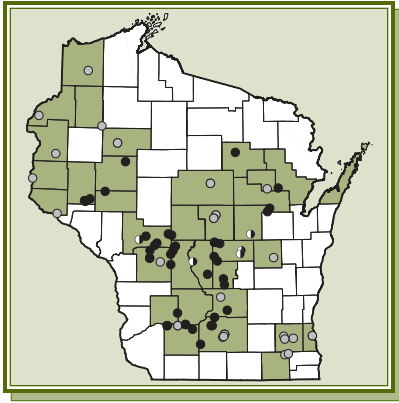
State rank: S1/S2.

Habitat: Associated with remnant prairies, grassy woodlands, and timber margins. The Grant County specimen is from sand barrens.

Discussion: Hind wings are yellow in all Wisconsin specimens. Wisconsin specimens were collected May 29, June 11, June 22, and July 14. These records dramatically extend the eastern edge of the range from the previous eastern boundary of western Iowa.

Specimens examined: 8 specimens from 5 sites.

References: Otte (1984).



Arphia sulphurea

(Fabricius)

Spring Yellow-winged
Grasshopper

Description: Smaller than other *Arphia* spp. Black to blackish-gray body, with yellow hind wings. Median carina of pronotum weakly cut by sulcus and commonly has a moderate arch readily observable from the side.

Range: Eastern half of North America, from New England to eastern Nebraska.

Wisconsin distribution: Abundant across much of Wisconsin, but most recently collected only from interior counties of the state.

State rank: S5.

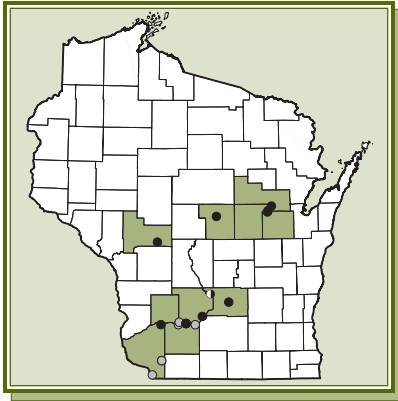
Habitat: Open woodlands with grassy understory, fields, prairies and roadsides.

Discussion: Nymphs overwinter, adults are collected from April to July, with most specimens collected in June.

Specimens examined: 56 males, 75 females from 93 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).





Arphia xanthoptera

(Burmeister)

Autumn Yellow-winged
Grasshopper

Description: Large, black to blackish-gray grasshopper. Median carina of pronotum prominent. Hind wings yellow. Hind tibiae black with white basal ring.

Range: Eastern half of U.S., from New England to Nebraska and Texas.

Wisconsin distribution: Tension Zone south.

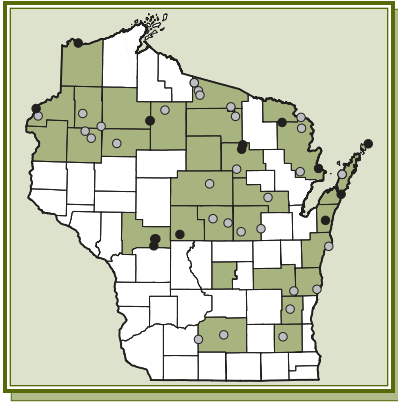
State rank: S3?.

Habitat: Sandy soils in dry open oak woodland, oak openings, jack pine/oak barrens, dry prairie, and upland fields.

Discussion: The range of *A. xanthoptera* appears to correlate with the range of black oak (*Quercus velutina*) within the state (Cochrane and Iltis 2000), as well as nationally (U.S.G.S. 2002). We suggest that this species may be dependent on oak savanna. Adults are collected from July to October in Wisconsin. Most specimens have been collected recently.

Specimens examined: 37 males, 8 females from 18 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Camnula pellucida

(Scudder)

Clearwinged Grasshopper

Description: Yellow to brown grasshopper, with mottled forewings. Hind wings clear, with no banding.

Range: Common in the northern states from Maine to Minnesota, and the western one-third of the U.S.

Wisconsin distribution: Widely collected across the northern half of the state.

State rank: S5.

Habitat: Sandy openings across the north, commonly collected in wet sandy ditches and Lake Superior sand dunes.

Discussion: The species has been found much less frequently in southern Michigan and Minnesota than in the northern portions of those states (Cantrall 1968, Somes 1914), but the last specimen from southern Wisconsin was taken in Marquette County in 1934. Hebard (1934) reported this species along Lake Michigan in 1901. Adults are generally collected from late June through September, but two records from Lincoln County are dated May 28, 1934, and June 2, 1948.

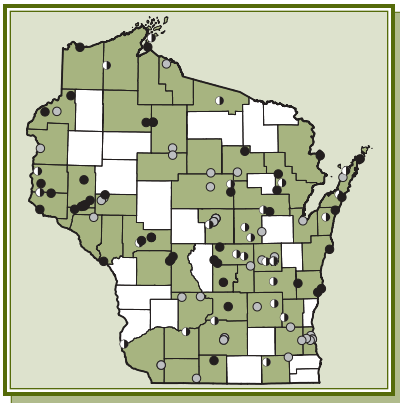
Specimens examined: 112 males, 94 females.

References: Hebard (1932, 1934), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 39



HERBERT D. POWNALL



*Chortophaga
viridifasciata* (DeGeer)
Greenstriped Grasshopper

Description: Medium to large grasshopper. Body color variable, brown to bright green, occasionally with purple highlights. Commonly, males are brown and females are green. Hind wings pale yellow with a faint black band. Male fastigium narrows strongly and a horizontal band marks the eye.

Range: Widespread and common across the eastern two-thirds of the U.S., ranging westward to the Rocky Mountains.

Wisconsin distribution: Common across the entire state.

State rank: S5.

Habitat: Grassy swales, stream banks, and roadside ditches.

Discussion: This species overwinters as a late instar nymph, adults collected from May to July.

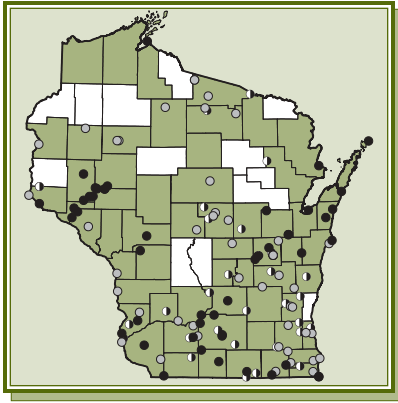
Specimens examined: 149 males, 202 females.

References: Hebard 1932, Cantrall 1968, Otte 1984, Vickery and Kevan 1985, Pfadt 1994.

see *Color Plate*, p. 39



GIFF BEATON



Dissosteira carolina
(Linnaeus)

Carolina Grasshopper

Description: Large grasshopper. Wisconsin specimens range from a solid brown or reddish-clay color to straw-colored with distinct banding on forewings. Hind wings black with yellow margins.

Range: Throughout the U.S. and southern Canada.

Wisconsin distribution: Common and widespread across the entire state.

State rank: S5.

Habitat: Found in roadsides and disturbed areas, wherever bare ground and open areas are present.

Discussion: *D. carolina* has been collected from late June through October in Wisconsin, most specimens captured in August and September. Because it is found in diverse habitats, there is great variation in forewing coloration.

Specimens examined: 163.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994).

see *Color Plate*, p. 39



DAN JOHNSON



Encoptolophus costalis
(Scudder)

Western Dusky Grasshopper

Description: Gray, medium-sized grasshopper with three distinct black bands on forewing. Pronotum with pale X-shaped marking on the disc. Hind wing clear to smoky with a weak, incomplete black band. Hind tibiae blue.

Range: Central Great Plains from Manitoba to central Mexico.

Wisconsin distribution: One specimen at the Milwaukee Public Museum from Milwaukee County in 1906.

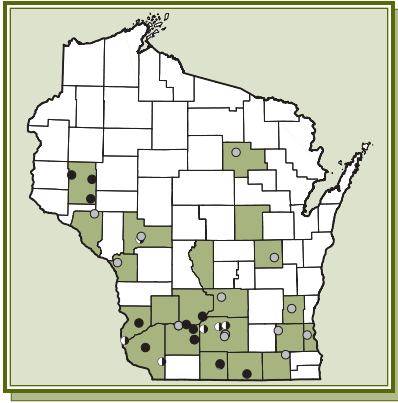
State rank: SH?/S1.

Habitat: Prairies, open grassland, and open woodland elsewhere, but no habitat information is available on the Wisconsin specimen.

Discussion: The 1906 collection of this species expands the known range, but since it has not been collected in almost 100 years, it has probably been extirpated from Wisconsin. This species was recognized based on the following characteristics: abdomen yellow below, tibiae blue-gray, fastigium longer than wide, dorsal field of forewings with converging pale stripes.

Specimens examined: 1 female.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993), Pfadt (1994).



Encoptolophus sordidus (Burmeister)

Dusky Grasshopper

Description: Gray medium-sized grasshopper with three distinct black bands on forewing. Pronotum with short black dashes on posterior edges and pale X-shaped marking on the disc. Hind wing clear to smoky with weak and incomplete black band. Hind tibiae dark brown.

Range: New England to the central Great Plains.

Wisconsin distribution: South of the Tension Zone and Langlade County in northern Wisconsin.

State rank: S5.

Habitat: *E. sordidus* prefers weedy sites in the western U.S., but is found on disturbed prairie remnants and woodlands in Wisconsin.

Discussion: Generally collected in late August and September, never found in abundance. It has been considered a pest species in the western states. Only one specimen has been collected in northern Wisconsin, though the range through neighboring states suggests it should be found in the North.

Specimens examined: 48 males, 25 females from 37 sites.

References: Somes (1914), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993).





Hippiscus ocelote
(Saussure)

Wrinkled Grasshopper

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings yellow to pale orange. Inner surface of hind femora yellow with distinct black bands. Hind tibiae yellow.

Range: Widespread over the eastern two-thirds of the U.S., to the front range of the Rocky Mountains but apparently limited in northern range to the 42nd Parallel east of the Great Plains.

Wisconsin distribution: One specimen from the southwest corner of the state (Cassville, Grant County).

State rank: SH.

Habitat: Dry fields and prairie, alfalfa and timothy hayfields.

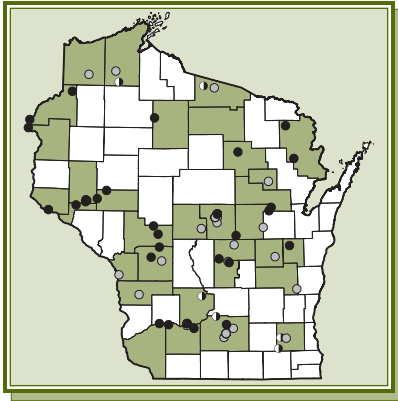
Discussion: The only Wisconsin specimen was collected September 30, 1956.

Specimens examined: 1 female at UW-Platteville Biology Department.

References: Capinera and Sechrist (1982), Otte (1984), Richman et al. (1993).



JIM McEVY



Pardalophora apiculata
(Harris)

Coralwinged Grasshopper

Description: Large, robust bodied grasshopper. Forewing area between veins Cu1 and Cu2 entirely dark. Hind wings pale to rosy red. Inner surface of hind femora pale yellow with black bands. Hind tibiae yellow.

Range: Widespread across north central U.S. into Canada, commonly associated with prairie-forest borders.

Wisconsin distribution: Widespread across the state.

State rank: S5.

Habitat: Generally found in association with sand or sandy outwash soils, uplands and old fields.

Discussion: Adults are collected from late April to early July. The species overwinters as a nymph. Many of the specimens have the proximal bands of the inner femur fused.

Specimens examined: 110 collection records.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et. al (1993).



*Pardalophora
haldemani* (Scudder)

Haldeman's Grasshopper

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings yellow to red. Inner surface of hind femora orange to rosy red with no banding. Hind tibiae yellow.

Range: Central Great Plains, southern Michigan west to the front range of the Rocky Mountains.

Wisconsin distribution: Sands of the Central Plains.

State rank: SH/S1.

Habitat: Open areas of sparse vegetation on sandy soils.

Discussion: The species overwinters as a nymph, adults are collected from May to July, though the specimen from Lone Rock, Richland County, was collected on August 10, 1906. The three most recent collections of this species are from 1981, 1973, and 1959. Possibly the species is being replaced by *P. apiculata* in Wisconsin as appears to be the case in areas of Michigan (Otte 1984).

Specimens examined: 11 males, 13 females from 12 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993).



*Pardalophora
phoenicoptera*
(Burmeister)

Orangewinged Grasshopper

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings deep orange to rosy red. Inner surface of hind femora blue basally, with two or three black bands. Hind tibiae yellow to orange.

Range: Southeastern U.S., from Florida north to Ohio, Indiana, and northern Illinois, west to Texas and Oklahoma.

Wisconsin distribution: Wood County in the sands of the Central Plains.

State rank: SH.

Habitat: Woods, openings, brushy hillsides and meadows in southern states. The Wood County specimen was collected at "Griffith St. Nursery."

Discussion: Hart and Gleason (1907) reported the species as common on grassy dunes and oak barrens along the Illinois River, and Hebard (1934) reported the species collected at Fulton, Illinois on the Mississippi River about 50 miles south of the Wisconsin border. The 50-year old Wisconsin specimen has the distinctive blue coloration on the inside of the hind femora.

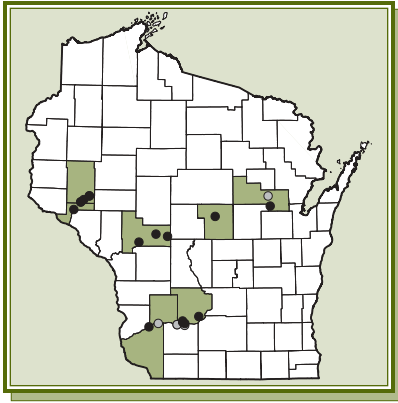
Specimens examined: 1 immature.

References: Hart and Gleason (1907), Hebard (1934), Otte (1984).

see *Color Plate*, p. 40



GIFF BEATON



Psinidia fenestralis
(Serville)

Longhorned Grasshopper

Description: Slender-bodied, dark gray to dark brown grasshopper. Hind wings rosy red, with clear band in the black outer margin of the male. Ensiform antennae.

Range: Eastern third of U.S. to eastern Minnesota.

Wisconsin distribution: Commonly collected along river bottoms in those counties with large rivers and sandy banks.

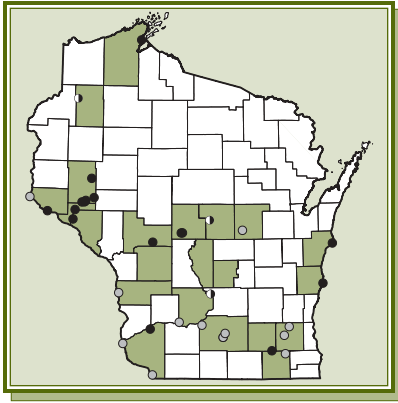
State rank: S2/S4.

Habitat: Sand, sand blowouts, and sandy river bottoms along the lower Chippewa and Wisconsin rivers.

Discussion: Most adults are collected from late June through September. Previous authors have discussed the ease by which this species is captured in the field, but our experience has been to the contrary. Adults, when disturbed along the Chippewa River, take flight, often traveling great distances with some individuals landing on the opposite bank. This species is commonly found in association with *Trimerotropis maritima* along the Lower Chippewa and Wisconsin rivers.

Specimens examined: 19 males, 9 females from 19 sites.

References: Hebard (1932), Froeshner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Spharagemon bolli

Scudder

Boll's Grasshopper

Description: Medium-sized, wood brown to dark brown grasshopper. Forewings may have two or three faint black bands. Hind wings yellow, with black band across the central area. Inner surface of hind femora with four black bands and the proximal two bands fused. Hind tibiae red, with ivory and black basal rings.

Range: Eastern two-thirds of the U.S., from New England to the front range of the Rocky Mountains.

Wisconsin distribution: Primarily south of the Tension Zone in Wisconsin. One specimen from Bayfield County coincides with previous records from the Michigan-Wisconsin border.

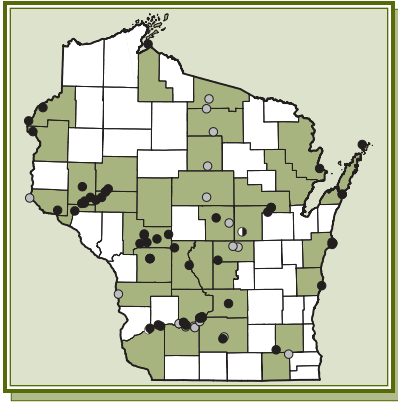
State rank: S3/S4.

Habitat: Open, sunny, dry prairie-woodland margins, including oak woodlands, oak savanna, barrens, dunes on Lake Michigan, sandblows, and sand flats along major rivers.

Discussion: *S. bolli* inhabits Lake Michigan dunes behind the beach, whereas *S. collare* is found on the open beach and dunes. Adults are collected from June to October, with most Wisconsin specimens collected in July.

Specimens examined: 37 males, 12 females from 35 sites.

References: Hebard (1932), Froeschner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Spharagemon collare
(Scudder)

Mottled Sand Grasshopper

Description: Medium-sized, gray to light brown, mottled grasshopper, with medium carina of pronotum prominent and deeply cut. Forewing banding, when present, appears as clustered speckles. Hind wings yellow, with the black band across the central area. Hind tibiae red to orange.

Range: Northern U.S., from New England to western Montana, southern extensions along the front range of the Rocky Mountains into New Mexico.

Wisconsin distribution: Collected widely across the state.

State rank: S5.

Habitat: Preferential to open sandy soil and sparse vegetation, barrens, dunes, sandy river terraces, and roadsides with open sand.

Discussion: *S. collare* is common on Lake Michigan beaches. Adults are collected from late June through September. We examined one specimen from the UW-Madison Arboretum labeled May 5, 1967, but consider it to be improperly labeled. This is perhaps the best flier of the three *Spharagemon* spp. occurring in Wisconsin and appears to colonize restored prairies.

Specimens examined: 113 males, 54 females from 62 sites.

References: Hebard (1932), Froeschner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Bomar (2001).

see *Color Plate*, p. 40



*Spharagemon
marmorata marmorata*
(Harris)

Northern Marbled Grasshopper

Description: Medium-sized grasshopper. Color quite variable, gray to brown, and usually highly speckled. Medium carinae of pronotum low. Hind wings yellow, with black band across central area, and clear to smoky tip outside black band. Hind tibiae red banded, with black and usually white basal rings.

Range: Northern states, New England to eastern Minnesota.

Wisconsin distribution: Southwestern Wisconsin to the northern edge of the Tension Zone.

State rank: S4.

Habitat: Jack pine barrens of the Central Plains, in open sandy areas on edges of trails, prairie borders within dry forest, sandblows, and river terraces.

Discussion: This beautiful mottled grasshopper is a very poor flier and a low, sluggish jumper. Most specimens are collected in July and August. The earliest Wisconsin collection date is July 1, 1998, in Juneau County. Only four specimens were collected prior to the most recent sampling period. Ontario (NatureServe 2001) and Wisconsin (NHI 2001) rank this as a species of Special Concern, though we found it to be well represented in sandy habitat in the central part of the state.

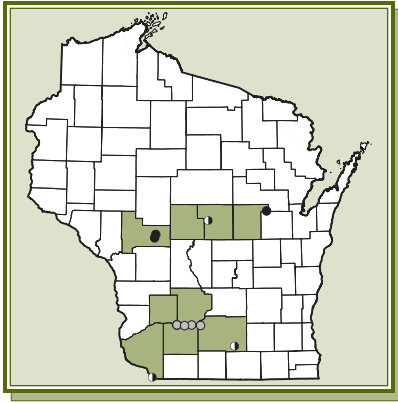
Specimens examined: 35 males, 7 females from 36 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), NHI (2001), NatureServe (2001).

see Color Plate, p. 40



MIKE REESE



Trachyrhachys kiowa
(Thomas)

Kiowa Grasshopper

Description: Slender, medium-sized tan grasshopper, with black splotches. Pronotum cut by two sulci. Forewings generally lighter near pronotum with two or three dark spots on side of forewings. Hind wings generally pale yellow basally in Wisconsin, but variable across the range. Tibiae light blue to blue-gray.

Range: Widespread across the U.S., from Virginia west to California, with its greatest predominance in the western Great Plains and Rocky Mountain states.

Wisconsin distribution: A few sites in the Central Plains and Western Uplands.

State rank: S2.

Habitat: This may be a barrens species in Wisconsin. It was not found at dry prairie sites.

Discussion: *T. kiowa* has only been collected at three sites during the recent period; two in jack pine barrens of the Central Plains and one in sand prairie near the Wolf River. Adults are collected July 13 through September 24. A great amount of variation exists in this species across its range; three or four subspecies may exist or even more than one species (Otte 1984). Wisconsin specimens fall into the category of *T. k. fuscifrons* or *T. k. thomasi*, having pale yellow hind wings with black outer bands of variable intensity.

Specimens examined: 13 males, 14 females from 12 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994), NHI (2001).



GEORGINE PRICE



Trimerotropis huroniana

E.M. Walker

Lake Huron Locust

Description: Medium to large-sized highly speckled grasshopper. Pronotum cut by two sulci. Gray to yellow or pale brown coloration with dark or weak banding on forewings. Hind wings clear to light yellow, with black band in the central area. Inner surface of hind femora with a broad dark basal band. Hind tibiae yellow.

Range: Northern dunes of Lake Michigan, Lake Huron, and Lake Superior.

Wisconsin distribution: Door County.

State rank: S1, END.

Global rank: G2/G3.

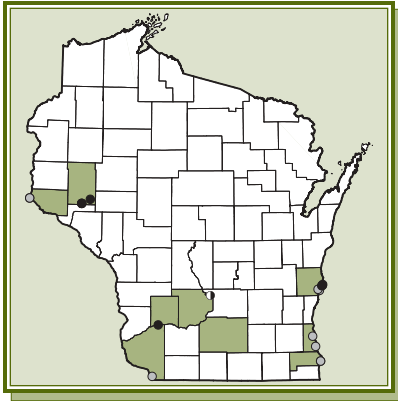
Habitat: Undisturbed high quality dunes on the northern shores of Lake Michigan. The grasshoppers are encountered behind the open beach, where dune grass (*Ammophila breviligulata*) has become established, though Hubbell (1929) observed that the females might be found on the beach just above the high water mark.

Discussion: Adults collected on July 28, 1999, and August 17, 1988. In heavily used areas of beach, the species is replaced by *Spharagemon collare*. The U.S. Fish and Wildlife Service lists this species, under the name of "Lake Huron Locust", as endangered. *T. huroniana* occurs only in Michigan, Wisconsin, and Ontario (NatureServe 2001).

Specimens examined: 5 males, 4 females from 2 sites.

References: Hubbell (1929), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), NatureServe (2001).

see Color Plate, p. 40



Trimerotropis maritima (Harris)

Seaside Grasshopper

Description: Medium to large-sized, highly speckled grasshopper. Pronotum cut by two sulci. Gray to yellow or pale brown coloration with bands on long forewings that may be very pale. Hind wings clear to light yellow, with the black band in the central area. Inner surface of the hind femora with narrow and short dark basal band. Hind tibiae yellow.

Range: Widespread in eastern and central U.S., with specimens from as far west as Arizona, most prominent along the Atlantic Coast.

Wisconsin distribution: Found commonly along the sandy shores of the lower Chippewa and Wisconsin rivers, and on beaches along southern Lake Michigan.

State rank: S2/S4.

Habitat: Sand beaches, river terraces, and sand barrens. The Lake Michigan habitat is similar to that of *T. huroniana*, but the two species have never been recorded together.

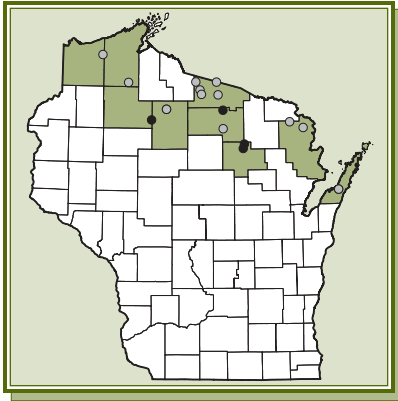
Discussion: Adults have been collected from July 13 to September 20. This species is a great flier, and often difficult to catch. Along the lower Chippewa River, we often observed adults resting on open sands. These individuals were very sensitive to movement and readily took flight, often for very long distances. Some individuals were never observed landing.

Specimens examined: 27 males, 21 females from 17 sites.

References: Hubbell (1929), Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



GIFF BEATON



*Trimerotropis
verruculata
verruculata* (Kirby)

Crackling Grasshopper

Description: Dark-bodied, strongly speckled grasshopper. Pronotum cut by two sulci. Hind wings pale yellow, with black band in central area and smoky band in distal third. Hind tibiae brown to black, with pale basal rings.

Range: Northern states of eastern and Midwestern U.S. into the border provinces, including the northernmost portions of Manitoba and Saskatchewan.

Wisconsin distribution: The Northern Highlands.

State rank: S3?.

Habitat: Northern mesic to dry mesic forest.

Discussion: There have been few recent collections of this species. Thirteen of 17 sites were collected prior to 1952. Most of the Wisconsin specimens were collected in August.

Specimens examined: 16 males, 12 females from 17 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).